
Stabilizing the satellite orientation by means of two doubled gyrodynes

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The article examines the problem of stabilizing the orientation of the satellite carrying two doubled gyrodynes. We suggest a control setting algorithm for stabilizing the satellite orientation in two stages. At the first stage we construct a Lyapunov function, at the second stage the task is considered according to the linear approximation. The stabilization is achieved by selecting the eigenvalues which correspond to the matrix of the transformed system. The control depends on these eigenvalues like on the variables. Both imaginary and real parts of this matrix eigenvalues are adjusted so that the span of control should be minimized. The article demonstrates the results of the numerical simulation.

Keywords: *satellite, doubled gyrodynes, stabilization with respect to a part of variables, Lyapunov function, linear approximation*

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